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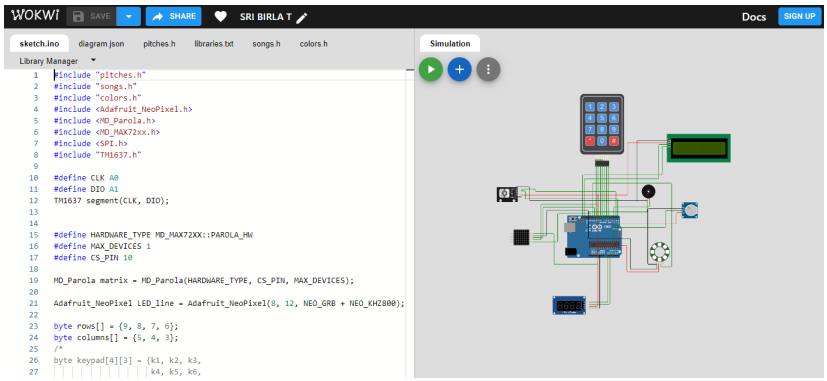
LINK:https://wokwi.com/projects/363814876966464513
SCREENSHOT:



SKETCH. INFO

```
#include "pitches.h"
#include "songs.h"
#include "colors.h"
#include <Adafruit_NeoPixel.h>
#include <MD_Parola.h>
#include <MD_MAX72xx.h>
#include <SPI.h>
#include "TM1637.h"

#define CLK A0
#define DIO A1
TM1637 segment(CLK, DIO);


#define HARDWARE_TYPE MD_MAX72XX::PAROLA_HW
#define MAX_DEVICES 1
#define CS_PIN 10

MD_Parola matrix = MD_Parola(HARDWARE_TYPE, CS_PIN, MAX_DEVICES);

Adafruit_NeoPixel LED_line = Adafruit_NeoPixel(8, 12, NEO_GRB + NEO_KHZ800);
```

```
byte rows[] = {9, 8, 7, 6};
byte columns[] = {5, 4, 3};
/*
byte keypad[4][3] = {k1, k2, k3,
                     k4, k5, k6,
                     k7, k8, k9,
                     ks, k0, kH
                    }; */

unsigned int notes[4][3] = {C5, D5, E5, F5, G5, _A5, B5, C6, D6, E6, F6, G6};
/*
int character_set[4] = {reset, reset, reset, reset};
*/
int Text[4];

char letter[] = {'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J', 'K', 'L', 'M', 'N', 'O', 'U', 'P', 'R', 'S', 'T', 'W', 'X',
'Y', 'Z'};

unsigned long t1;
unsigned long t2;

void setup() {

  segment.init();
  segment.set(BRIGHTEST);
  segment.display(3, 8);

  matrix.begin();
  matrix.setIntensity(0);
  matrix.displayClear();

  pinMode(2, OUTPUT);
  pinMode(3, OUTPUT);
  pinMode(4, OUTPUT);
  pinMode(5, OUTPUT);

  pinMode(9, INPUT_PULLUP);
  pinMode(8, INPUT_PULLUP);
  pinMode(7, INPUT_PULLUP);
  pinMode(6, INPUT_PULLUP);

  pinMode(SS, OUTPUT);

  LED_line.begin();
```

```
  SPI.begin();
  SPI.setClockDivider(SPI_CLOCK_DIV4);
  SPI.setBitOrder(MSBFIRST);
  digitalWrite(SS, HIGH);

  for (int i = 3; i < 6; i++) {
    digitalWrite(i, LOW);
  }

  t1 = millis();


  matrix.setTextAlignment(PA_CENTER);
  matrix.print(letter[0]);
}

//////////////////////////////////////////////////

void loop() {

  LedStrip(BLANK);

  t2 = millis();

  if ((t2 - t1) >= 100) {
    t1 = millis();
    CheckKey();
  }


}
/*
void GenerateText(byte digit) {

  static byte c = 0;

  if (c <= 3) {

    character_set[0] = character_set[1];
    character_set[1] = character_set[2];
    character_set[2] = character_set[3];
    character_set[3] = digit;
```

```
    c++;

  } else {

    Reset7Seg();
    c = 1;
    character_set[3] = digit;
  }

  Text[0] = (place[0] << 8) | character_set[0];
  Text[1] = (place[1] << 8) | character_set[1];
  Text[2] = (place[2] << 8) | character_set[2];
  Text[3] = (place[3] << 8) | character_set[3];

  if (character_set[0] == k1 && character_set[1] == k1 && character_set[2] == k1 &&
character_set[3] == kH) {
    PlayPeppa();
    Reset7Seg();

  } else if (character_set[0] == k1 && character_set[1] == k2 && character_set[2] == k3 &&
character_set[3] == kH) {
    PlayPrzedszkolaczek();
    Reset7Seg();
  } else if (character_set[0] == k9 && character_set[1] == k8 && character_set[2] == k7 &&
character_set[3] == kH) {
    for (int i = 0; i < 2; i++) {
      PlayFarma();
    }
    Reset7Seg();
  }

  else if (character_set[0] != reset && character_set[1] != reset && character_set[2] != reset &&
character_set[3] == kH) {
    for (int j = 0; j < 5; j++) {
      t1 = millis();
      t2 = millis();
      while (t2 - t1 < 1000) {
        LedStrip(RED);
        tone(2, C1);
        t2 = millis();
      }

      t1 = millis();
```

```
      t2 = millis();

      while (t2 - t1 < 500) {
        LedStrip(BLANK);
        noTone(2);
        t2 = millis();
      }
    }
    Reset7Seg();

  }
}
*/
byte SearchKey(byte ActiveRow) {

  for (byte i = 0; i < 3; i++) {
    digitalWrite(columns[i], HIGH);
    if (digitalRead(rows[ActiveRow]) == HIGH) {

      for (byte j = 2; j < 6; j++) {

        digitalWrite(j, LOW);
      }

      return i;
    }
  }
}

void CheckKey(void) {

  byte a = 0;
  byte b = 0;

  for (a = 0; a < 4; a++) {
    if (digitalRead(rows[a]) == LOW) {
      b = SearchKey(a);
      tone(2, notes[a][b], 200);
      //GenerateText(keypad[a][b]);
    }
  }
}

void LedStrip(byte Red, byte Green, byte Blue) {
```

```
  for (int j = 0; j < 8; j++) {
    LED_line.setPixelColor(j, LED_line.Color(Red, Green, Blue));
  }

  LED_line.show();
}

void PlayPeppa(void) {

  LedStrip(PINK);
  int note;
  for (note = 0; note < 11; note++) {

    int noteDuration = 1000 / Peppa_durations[note];
    tone(2, Peppa[note], noteDuration);
    int pauseBetweenNotes = noteDuration * 1.5;
    delay(pauseBetweenNotes);

  }

  noTone(2);

}

void PlayPrzedszkolaczek(void) {

  LedStrip(YELLOW);
  int note;
  for (note = 0; note < 29; note++) {

    int noteDuration = 1000 / Przedszkolaczek_durations[note];
    tone(2, Przedszkolaczek[note], noteDuration);
    int pauseBetweenNotes = noteDuration * 1.5;
    delay(pauseBetweenNotes);

  }

  noTone(2);

}

/*
void Reset7Seg(void) {
```

```
  for (int i = 0; i < 4; i++) {
    character_set[i] = reset;
  }

  Text[0] = (place[0] << 8) | character_set[0];
  Text[1] = (place[1] << 8) | character_set[1];
  Text[2] = (place[2] << 8) | character_set[2];
  Text[3] = (place[3] << 8) | character_set[3];

}

void PlayFarma(void) {

  LedStrip(ORANGE);
  int note;
  for (note = 0; note < 29; note++) {

    int noteDuration = 1000 / Farma_durations[note];
    tone(2, Farma[note], noteDuration);
    int pauseBetweenNotes = noteDuration * 1.5;
    delay(pauseBetweenNotes);

  }

  noTone(2);
}
*/
```